the beginning and end of the school year. The dynamic load during all periods of research caused change in the performance of the cardiovascular system.

Dynamic load resulted in an increase in the systolic arterial pressure of first-graders at the survey at the beginning of the school year. After veloergometry, there was a very significant link between minute volume and SBP ($r = 0.41$, $p < 0.01$), stroke volume and SBP ($r = 0.35$, $p < 0.05$). After isometric the connection between these indices was insignificant, but an inverse correlation was observed between the IOC and DBP ($r = -0.37$, $p < 0.01$). What is noticeable is that a significant shift in vegetative homeostasis towards the predominance of the sympathetic activity of the ANS after the isometric load of first-graders.

During the study of state of the cardiovascular system of first-year boys at the end of the school year, we found some reduction in systolic blood pressure compared to the beginning of the school year ($p < 0.05$). The stroke volume of blood at quiescent state exceeded the analogous valuesof this indicator fixed in the middle of the academic year. At the end of the academic year, dynamic and isometric loads led to various changes in the cardiovascular system of first-graders.

Dynamic load caused an increase of stroke volume and cardiac output after completion. Isometric load did not lead to similar changes of the stroke volume and cardiac output. After a dynamic load, we recorded reliable changes in systolic, diastolic and pulse pressure.

DEVELOPMENTAL CHANGES OF NO-ERGIC SYNAPTIC TRANSMISSION IN RAT SYMPATHETIC GANGLIA

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NO is one of the most important mediators of intracellular and intercellular interaction in the nervous, immune and endocrine systems. Autonomic neurons undergo restructuring of the mediator composition, and the electrophysiological characteristics of the neuronal activity change in postnatal ontogenesis. However, the age-related aspects of the synaptic transmission involving NO in the autonomic nervous system remain unclear.

The aim of the study was to study the effect of the donor and the inhibitor of NO on synaptic transmission in the sympathetic ganglia in postnatal ontogenesis.

Synaptic transmission in sympathetic ganglia was studied electrophysiologically in vitro. The cranial cervical sympathetic ganglion (SCG) was studied in rats of different ages (newborns, 10-, 20-, 30-, 60-, 180-day and three-year). The experiments were carried out according to the basic bioethical rules. The changes in the amplitude and duration of EPSP in the SCG was studied using electrical stimulation under the influence of the exogenous donor of NO – sodium nitroprusside (SN) and the blocker of NO synthesis (L-NAME) at a concentration of 100 μM.

The results showed that in the SCG, the SN application resulted in an increase in the amplitude of the evoked potentials, which peaked at 10-day-old and older rats after 10 min. This increase in amplitude was completely eliminated under the influence of L-NAME for 30 min. The amplitude of the EPSP increased under the influence of SN and decreased under the influence of L-NAME in 10-day-old and more adult rats.

In vivo experiments, the 10-minute SN application caused an increase of the average amplitude of discharges, an increase in the power of frequencies in the respiratory range and frequencies in the range of 10-14, 22-32 Hz in 10-day and more adult rats. With L-NAME application, the power of all spectrum frequencies decreased within 1 hour. Similar changes were observed in 10-day and more adults. SN and L-NAME did not affect the characteristics of the electrical activity in newborn rats.

Thus, NO activates the synaptic transmission in the sympathetic ganglia of rats from 10 days of life. The absence of the significant effect of NO on synaptic transmission in newborn rats is associated with the absence of the enzyme for the synthesis of NO - NO synthase at this age in sympathetic fibers.

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NPY5-TAKE PART IN CONTRIBUTION OF VENTRICULAR MYOCARDIAL OF NEWBORN RATS

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Neuropeptide Y has trophic effects, in particular contributes to neurogenesis, angiogenesis, myocardial hypertrophy. In addition, neuropeptide Y plays an important role in the processes of age-related development of neurons in the autonomic nervous system. Neuropeptide Y stimulates the activation, migration, proliferation of endothelial cells. It is established that neuropeptide Y is required for age-related development of calcium channels L-type in the myocardium.There is evidence of an increase in the density of the location of alpha and beta-adrenoceptors in the cardiac muscle by the influence of neuropeptide Y, which is important for the formation of sympathetic innervation of the heart. According to the literature review in the nervous system, the percentage of neurons containing NPY at the time of birth is 73%. With aging it decreases to 37%. Initiation of NPY-receptors leads to activation of nonselective cation channels with predominance of permeability for calcium ions. Free sarcoplasmic calcium connected to the regulatory protein troponin, leads to increasing formation of the actomyosin complexes, triggering a contractile response. The aim of this study is to determine the role of NPY5 - receptors in the realization of positive inotropic effect. According to certain authors, from the two neurotransmitters stored in the sympathetic nerves, neuropeptide Y, but not noradrenaline, controls the